

2005 Annual Tuberculosis Surveillance Report

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Introduction

In 2005, Virginia reported 355 *Mycobacterium tuberculosis* (TB) cases, an 8% increase over 2004. Virginia ranked eighth in number of cases reported and had a case rate of 4.7 per hundred thousand. This report provides demographic data for 2001 through 2005. It also contains state and regional data for selected risk factors and characteristics.

Demographic Characteristics

In 2005, 48.7% of TB cases were female and 51.3% were male. Compared to 2004, TB cases increased 8.2% among Asian/Pacific Islanders, from 98 cases to 106 cases; among non-Hispanic Blacks, 11.1% from 100 cases to 111 cases; among Hispanics, 8.8% from 80 cases to 87 cases.

Twenty-six pediatric cases, aged 0 to 14 were reported in 2005 as compared to 20 cases in 2004, a 30% increase. Among the 15-24 year old age group, 40 cases were reported for a slight increase over 2004. One hundred forty-two cases were reported among the 25-44 year old age group, an increase of 11%. The majority of cases reported in persons age 45 and younger occurred among foreign-born residents. Among the cases aged 45-64, 78 cases were reported and among the cases over the age of 64, 69 cases were reported.

In 2005, 225 or 63.4% of Virginia's TB cases were reported among foreign-born persons. The diversity of cultures and countries of origin among Virginia's TB cases is remarkable. These cases represent 45 countries of origin and speak 19 languages other than English. The top five countries of origin include Vietnam, India, Mexico, the Philippines and South Korea.

Geographic Distribution

At least one TB case was reported from each of the 35 health districts in Virginia. Northern region reported 183 cases followed by Eastern region with 82 cases. Central region reported 52 cases and Northwest and Southwest reported 19 cases each.

HIV Co-Infection and Selected Risk Factors

Several risk factors are associated with TB including occupational risk, congregate living, co-infection with HIV, and substance use. In 2005, seven health care and four migrant workers were reported with TB. Thirteen residents of long-term care facilities were reported, eight cases were reported among prison or jail inmates and six cases were reported among homeless persons. Among the 252 cases with documented HIV test results 7.9% were infected with HIV and 60% of these cases were aged 25-44. Overall, 5.6% of Virginia's cases were reported with HIV infection as compared to 4.6% of cases in 2004. In 2005 34 cases (9.6%) reported excessive alcohol use and 14 cases (3.9%) reported injection drug use (IDU) or non-injection drug use.

Drug Resistance

Two hundred sixty TB cases were culture positive and drug susceptibility testing was performed. Drug resistance was found in 29 cases. Three cases of multidrug-resistant TB (MDR-TB) were reported. (By definition MDR-TB is resistance to isoniazid and rifampin). Resistance to at least one first-line drug, most frequently isoniazid, was found in 26 cases.

Mortality

In 2005, 25 (7.0%) TB cases died during treatment and 6 (1.7%) cases were diagnosed at the time of death or post-mortem. Late entry into treatment, other underlying medical conditions, and other causes of death may have contributed to these deaths.

Treatment Outcomes

For 2004, the year with the most complete data available, 90.6% of the drug-susceptible cases completed therapy within 12 months. Patients who died at diagnosis or during treatment, and patients who had drug resistance to rifampin are not included in the completion of therapy calculation.

Contact Investigations

In 2003, contacts were identified for 96% of the newly reported acid-fast bacilli (AFB) smear positive cases. Of those, 95% were evaluated for infection and disease. Among the 585 people identified with latent TB infection (LTBI), 432 or 74% were started on treatment. Among these contacts, 192 or 65% completed treatment for latent TB infection.

Table 1. Number and Rate of Tuberculosis Cases: Virginia and United States, 1996-2005

Year	Virginia		United States*	
	No.	Rate	No.	Rate
1996	349	5.2	21,337	8.0
1997	349	5.1	19,851	7.4
1998	339	4.9	18,361	6.8
1999	334	4.8	17,531	6.4
2000	292	4.1	16,377	5.8
2001	306	4.3	15,989	5.6
2002	315	4.3	15,075	5.2
2003	332	4.5	14,871	5.1
2004	329	4.4	14,511	4.9
2005	355	4.7	14,093	4.8

US data from: CDC. Reported Tuberculosis in the United States, 2003. Atlanta, GA: US DHHS, CDC, September, 2004.

US 2004 data from: CDC. Trends in Tuberculosis--United States, 2004. MMWR 2005; 54:245.

US 2005 data from CDC. Trends in Tuberculosis--United States, 2005. MMWR 2006; 55:305.

Table 2. Tuberculosis Cases and Rate per 100,000 by Health Region: Virginia, 2001-2005

Region	2001			2002			2003			2004			2005		
	No.	%	Rate	No.	%	Rate	No.	%	Rate	No.	%	Rate	No.	%	Rate
Total	306	100	4.3	315	100	4.3	332	100	4.5	329	100	4.4	355	100	4.7
Central	50	16.3	4.2	45	14.3	3.8	65	19.6	5.2	51	15.5	4.1	52	14.6	4.0
Eastern	50	16.3	2.9	53	16.8	3.1	59	17.8	3.3	64	19.5	3.6	82	23.1	4.6
Northern	174	56.9	9.6	177	56.2	9.8	157	47.3	8.1	168	51.1	8.5	183	51.5	9.0
Northwest	12	56.9	1.2	15	4.8	1.5	29	8.7	2.6	24	7.3	2.2	19	5.4	1.6
Southwest	20	6.5	1.5	25	7.9	1.9	22	6.6	1.7	22	6.7	1.7	19	5.4	1.4

Table 3. Tuberculosis Cases by Demographics and Location: Virginia, 2001-2005

	2001		2002		2003		2004		2005	
Total Cases	306		315		332		329		355	
	No.	%	No.	%	No.	%	No.	%	No.	%
Sex										
Female	125	40.8	137	43.5	133	40.1	162	49.2	173	48.7
Male	181	59.2	178	56.5	199	59.9	167	50.8	182	51.3
Race/Ethnicity										
Asian/Pacific Islander	85	27.8	94	29.8	105	31.6	98	29.8	106	29.9
Black, Not Hispanic	101	33.0	86	27.3	101	30.4	100	30.4	111	31.3
Hispanic	70	22.9	69	21.9	63	19.0	80	24.3	87	24.5
White, Not Hispanic	50	16.3	66	21.0	63	19.0	50	15.2	51	14.4
Other	0	0	0	0	0	0	1	0.30	0	0.00
Age										
0-14	11	3.6	16	5.1	19	5.7	20	6.1	26	7.3
15-24	37	12.1	36	11.4	47	14.2	36	10.9	40	11.3
25-44	128	41.8	114	36.2	115	34.6	128	38.9	142	40.0
45-64	75	24.5	83	26.3	89	26.8	83	25.2	78	22.0
>64	55	18.0	66	21.0	62	18.7	62	18.8	69	19.4
Place of Birth										
Foreign-born	193	63.1	189	60.0	207	62.3	216	65.7	225	63.4
US-born	113	36.9	126	40.0	125	37.7	113	34.3	130	36.6
Health Region										
Central	50	16.3	45	14.3	65	19.6	51	15.5	52	14.6
Eastern	50	16.3	53	16.8	59	17.8	64	19.5	82	23.1
Northern	174	56.9	177	56.2	157	47.3	168	51.1	183	51.5
Northwest	12	3.9	15	4.8	29	8.7	24	7.3	19	5.4
Southwest	20	6.5	25	7.9	22	6.6	22	6.7	19	5.4

Table 4. Tuberculosis Cases by Demographics and Region: Central, 2001-2005

	2001		2002		2003		2004		2005	
Total Cases	50		45		65		51		52	
	No.	%	No.	%	No.	%	No.	%	No.	%
Sex										
Female	17	34.0	24	53.3	19	29.2	19	37.3	24	46.2
Male	33	66.0	21	46.7	46	70.8	32	62.7	28	53.8
Race/Ethnicity										
Asian/Pacific Islander	7	14.0	7	15.6	11	16.9	6	11.8	11	21.2
Black, Not Hispanic	28	56.0	25	55.6	37	56.9	28	54.9	27	51.9
Hispanic	5	9.4	3	6.7	9	13.8	10	19.6	5	9.6
White, Not Hispanic	10	20.0	10	22.2	8	12.3	7	13.7	9	17.3
Age										
0-14	3	6.0	1	2.2	1	1.5	2	3.9	4	7.7
15-24	2	4.0	3	6.7	6	9.2	6	11.8	6	11.5
25-44	18	36.0	9	20.0	21	32.3	18	35.3	18	34.6
45-64	16	32.0	21	46.7	28	43.1	19	37.3	16	30.8
>64	11	22.0	11	24.4	9	13.8	6	11.8	8	15.4
Place of Birth										
Foreign-born	18	36.0	12	26.7	22	33.8	21	41.2	18	34.6
US Born	32	64.0	33	73.3	43	66.2	30	58.8	34	65.4

Table 5. Tuberculosis Cases by Demographics and Region: Eastern, 2001-2005

	2001		2002		2003		2004		2005	
Total Cases	50		53		59		64		82	
	No.	%	No.	%	No.	%	No.	%	No.	%
Sex										
Female	19	38.0	22	41.5	15	25.4	30	46.9	32	39.0
Male	31	62.0	31	58.5	44	74.6	34	53.1	50	61.0
Race/Ethnicity										
Asian/Pacific Islander	5	10.0	10	18.9	17	28.8	14	21.9	14	17.1
Black, Not Hispanic	34	68.0	28	52.8	27	45.8	29	45.3	45	54.9
Hispanic	5	8.8	4	7.5	4	6.8	5	7.8	9	11.0
White, Not Hispanic	6	12.0	11	20.8	11	18.6	16	25.0	14	17.1
Age										
0-14	0	0.0	0	0.0	0	0.0	2	3.1	7	8.5
15-24	4	8.0	3	5.7	4	6.8	2	3.1	6	7.3
25-44	14	28.0	11	20.8	16	27.1	21	32.8	30	36.6
45-64	17	34.0	24	45.3	15	25.4	22	34.4	16	19.5
>64	15	30.0	15	28.3	24	40.7	17	26.6	23	28.0
Place of Birth										
Foreign-born	11	22.0	15	28.3	22	37.3	22	34.4	29	35.4
US-born	39	78.0	38	71.7	37	62.7	42	65.6	53	64.6

Table 6. Tuberculosis Cases by Demographics and Region: Northern, 2001-2005

	2001		2002		2003		2004		2005	
	174		177		157		168		183	
Total Cases	No.	%	No.	%	No.	%	No.	%	No.	%
Sex										
Female	80	46.0	77	43.5	86	54.8	91	54.2	104	56.8
Male	94	54.0	100	56.5	71	45.2	77	45.8	79	43.2
Race/Ethnicity										
Asian/Pacific Islander	71	40.8	73	41.2	72	45.9	73	43.5	78	42.6
Black, Not Hispanic	32	18.4	26	14.7	30	19.1	34	20.2	26	14.2
Hispanic	55	32.2	59	33.3	35	22.3	52	31.0	66	36.1
White, Not Hispanic	16	9.2	19	10.7	20	12.7	9	5.4	13	7.1
Age										
0-14	8	4.6	14	7.9	11	7.0	10	6.0	13	7.1
15-24	29	16.7	28	15.8	27	17.2	24	14.3	22	12.0
25-44	86	49.4	84	47.5	68	43.3	76	45.2	87	47.5
45-64	31	17.8	25	14.1	32	20.4	31	18.5	33	18.0
>64	20	11.5	26	14.7	19	12.1	27	16.1	28	15.3
Place of Birth										
Foreign-born	155	89.1	154	87.0	143	91.1	154	91.7	163	89.1
US-born	19	10.9	23	13.0	14	8.9	14	8.3	20	10.9

Table 7. Tuberculosis Cases by Demographics and Region: Northwest, 2001-2005

	2001		2002		2003		2004		2005	
	12		15		29		24		19	
Total Cases	No.	%	No.	%	No.	%	No.	%	No.	%
Sex										
Female	5	41.7	5	33.3	9	31.0	12	50.0	9	47.4
Male	7	58.3	10	66.7	20	69.0	12	50.0	10	52.6
Race/Ethnicity										
Asian/Pacific Islander	1	8.3	2	13.3	3	10.3	4	17.4	1	5.3
Black, Not Hispanic	3	25.0	0	0.0	3	10.3	3	13.0	8	42.1
Hispanic	2	10.5	3	20.0	14	48.3	11	47.8	5	26.3
White, Not Hispanic	6	50.0	10	66.7	9	31.0	5	21.7	5	26.3
Other	0	0	0	0	0	0	1	4.2	0	0.0
Age										
0-14	0	0.0	0	0.0	3	10.3	4	16.7	1	5.3
15-24	1	8.3	2	13.3	8	27.6	4	16.7	5	26.3
25-44	5	41.7	3	20.0	6	20.7	8	33.3	3	15.8
45-64	4	33.3	5	33.3	7	24.1	7	29.2	8	42.1
>64	2	16.7	5	33.3	5	17.2	1	4.2	2	10.5
Place of Birth										
Foreign-born	4	33.3	6	40.0	18	62.1	15	62.5	9	47.4
US-born	8	66.7	9	60.0	11	37.9	9	37.5	10	52.6

Table 8. Tuberculosis Cases by Demographics and Region: Southwest, 2001-2005

	2001		2002		2003		2004		2005	
Total Cases	20		25		22		22		19	
	No.	%	No.	%	No.	%	No.	%	No.	%
Sex										
Female	4	20.0	9	36.0	4	18.2	10	45.5	4	21.1
Male	16	80.0	16	64.0	18	81.8	12	54.5	15	78.9
Race/Ethnicity										
Asian/Pacific Islander	1	5.0	2	8.0	2	9.1	1	4.5	2	10.5
Black, Not Hispanic	4	20.0	9	36.0	4	18.2	6	27.3	4	21.1
Hispanic	3	14.3	0	0.0	1	4.5	2	9.1	2	10.5
White, Not Hispanic	12	60.0	14	56.0	15	68.2	13	59.1	11	57.9
Age										
0-14	0	0.0	1	4.0	4	18.2	2	9.1	1	5.3
15-24	1	5.0	0	0.0	2	9.1	0	0.0	1	5.3
25-44	5	25.0	7	28.0	4	18.2	5	22.7	4	21.1
45-64	7	35.0	8	32.0	7	31.8	4	18.2	5	26.3
>64	7	35.0	9	36.0	5	22.7	11	50.0	8	42.1
Place of Birth										
Foreign-born	5	25.0	2	8.0	2	9.1	4	18.2	6	31.6
US-born	15	75.0	23	92.0	20	90.9	18	81.8	13	68.4

Table 9. Tuberculosis Cases by Race/Ethnicity and Place of Birth: Virginia, 2001-2005

Race/Ethnicity	2001		2002		2003		2004		2005	
	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born
Total	113	193	126	189	125	207	113	216	129	226
Asian/Pacific Islander	1	84	0	94	5	100	3	95	5	101
Black, Not Hispanic	69	32	62	24	68	33	64	36	76	36
Hispanic	4	66	9	60	4	59	6	74	8	79
White, Not Hispanic	39	11	55	11	48	15	40	10	40	10
Other	0	0	0	0	0	0	0	1	0	0

Table 10. Tuberculosis Cases by Race/Ethnicity and Place of Birth: Central Region, 2001-2005

Race/Ethnicity	2001		2002		2003		2004		2005	
	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born
Total	32	18	33	12	43	22	30	21	34	18
Asian/Pacific Islander	0	7	0	7	0	11	0	6	2	9
Black, Not Hispanic	24	4	24	1	34	3	24	4	24	3
Hispanic	0	5	0	3	1	8	0	10	0	5
White, Not Hispanic	8	2	9	1	8	0	6	1	8	1

Table 11. Tuberculosis Cases by Race/Ethnicity and Place of Birth: Eastern Region, 2001-2005

Race/Ethnicity	2001		2002		2003		2004		2005	
	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born
Total	39	11	38	15	37	22	42	22	53	29
Asian/Pacific Islander	0	5	0	10	0	17	1	13	1	12
Black, Not Hispanic	33	1	26	1	27	0	27	2	41	6
Hispanic	0	5	0	4	0	4	0	5	0	9
White, Not Hispanic	6	0	12	0	10	1	14	2	11	2

Table 12. Tuberculosis Cases by Race/Ethnicity and Place of Birth: Northern Region, 2001-2005

Race/Ethnicity	2001		2002		2003		2004		2005	
	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born
Total	19	155	23	154	14	143	14	154	20	163
Asian/Pacific Islander	1	70	0	73	2	70	2	71	2	76
Black, Not Hispanic	7	25	4	22	3	27	6	28	3	23
Hispanic	4	51	9	50	2	33	3	49	8	58
White, Not Hispanic	7	9	10	9	7	13	3	6	7	6

Table 13. Tuberculosis Cases by Race/Ethnicity and Place of Birth: Northwest Region, 2000-2004

Race/Ethnicity	2001		2002		2003		2004		2005	
	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born
Total	8	4	9	6	11	18	9	15	10	9
Asian/Pacific Islander	0	1	0	2	1	2	0	4	0	1
Black, Not Hispanic	2	1	0	0	1	2	2	1	5	3
Hispanic	0	2	0	3	1	13	3	8	0	5
White, Not Hispanic	6	0	9	1	8	1	4	1	5	0
Other	0	0	0	0	0	0	0	1	0	0

Table 14. Tuberculosis Cases by Race/Ethnicity and Place of Birth: Southwest Region, 2000-2004

Race/Ethnicity	2001		2002		2003		2004		2005	
	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born	US-born	Foreign-born
Total	15	5	23	2	20	2	18	4	13	6
Asian/Pacific Islander	0	1	0	2	2	0	0	1	0	2
Black, Not Hispanic	3	1	8	0	3	1	5	1	3	1
Hispanic	0	3	0	0	0	1	0	2	0	2
White, Not Hispanic	12	0	15	0	15	0	13	0	10	1

Table 15. Tuberculosis Cases by Selected Risk Factors: Virginia, 2001-2005

Total Cases	2001		2002		2003		2004		2005	
	306		315		332		329		355	
	No.	%	No.	%	No.	%	No.	%	No.	%
Occupation										
Health Care	6	2.0	10	3.2	8	2.4	6	1.8	7	2.0
Migrant	6	2.0	3	1	3	0.9	3	0.9	4	1.1
Corrections	1	0.3	1	0.3	0	0.0	0	0.0	0	0.0
Type of Residence										
Long Term Care	10	3.3	18	5.7	24	7.2	15	4.6	13	3.7
Prison/Jail	3	1.0	4	1.3	6	1.8	7	2.1	8	2.3
Homeless	11	3.6	17	5.4	12	3.6	7	2.1	6	1.7
Co-Morbidity										
HIV	29	9.5	12	3.8	21	6.3	15	4.6	20	5.6
Substance Use										
Alcohol	17	5.6	25	7.9	33	9.9	29	8.8	34	9.6
IDU	2	0.7	2	1.6	8	2.4	3	0.9	2	0.6
Non-IDU	4	1.3	5	1.6	4	1.2	9	2.7	12	3.4

Table 16. Tuberculosis Cases by Selected Risk Factors: Central Region 2001-2005

Total Cases	2001		2002		2003		2004		2005	
	50		45		65		51		52	
	No.	%	No.	%	No.	%	No.	%	No.	%
Occupation										
Health Care	2	4.0	1	2.2	3	4.6	0	0.0	0	0.0
Migrant	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Corrections	0	0.0	1	2.2	0	0.0	0	0.0	0	0.0
Type of Residence										
Long Term Care	2	0.0	4	8.9	4	6.2	2	3.9	3	5.8
Prison/Jail	0	0.0	3	6.7	1	1.5	0	0.0	2	3.8
Homeless	2	4.0	3	6.7	6	9.2	1	2.0	1	1.9
Co-Morbidity										
HIV	8	16.0	2	4.4	4	6.2	4	7.8	5	9.6
Substance Use										
Alcohol	7	14.0	4	8.9	12	18.5	7	13.7	7	13.5
IDU	1	2.0	1	2.2	3	4.6	1	2.0	0	0.0
Non-IDU	2	4.0	4	8.9	2	3.1	1	2.0	4	7.7

Table 17. Tuberculosis Cases by Selected Risk Factors: Eastern Region, 2001-2005

Total Cases	2001		2002		2003		2004		2005	
	50		53		59		64		82	
	No.	%	No.	%	No.	%	No.	%	No.	%
Occupation										
Health Care	2	4.0	1	1.9	1	1.7	2	3.1	1	1.2
Migrant	4	8.0	3	5.7	2	3.4	3	4.7	4	4.9
Corrections	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Type of Residence										
Long Term Care	2	4.0	2	3.8	3	5.1	1	1.6	1	1.2
Prison/Jail	1	2.0	0	0.0	1	1.7	1	1.6	2	2.4
Homeless	0	0.0	3	5.7	3	5.1	2	3.1	3	3.7
Co-Morbidity										
HIV	5	10.0	3	5.7	3	5.1	5	7.8	6	7.3
Substance Use										
Alcohol	2	4.0	8	15.1	7	11.9	2	3.1	14	17.1
IDU	1	2.0	0	0.0	3	5.1	0	0.0	1	1.2
Non-IDU	1	2.0	1	1.9	0	0.0	1	1.6	5	6.1

Table 18. Tuberculosis Cases by Selected Risk Factors: Northern Region 2001-2005

Total Cases	2001		2002		2003		2004		2005	
	174		177		157		168		183	
	No.	%	No.	%	No.	%	No.	%	No.	%
Occupation										
Health Care	2	1.1	7	4.0	2	1.3	3	1.8	5	2.7
Migrant	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Corrections	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Type of Residence										
Long Term Care	3	1.7	10	5.6	15	9.6	8	4.8	7	3.8
Prison/Jail	1	0.6	1	0.6	3	1.9	1	0.6	2	1.1
Homeless	6	3.4	8	4.5	3	1.9	4	2.4	1	0.5
Co-Morbidity										
HIV	16	9.2	6	3.4	12	7.6	5	3.0	9	4.9
Substance Use										
Alcohol	6	3.4	5	2.8	5	3.2	7	4.2	5	2.7
IDU	0	0.0	1	0.6	2	1.3	2	1.2	0	0.0
Non-IDU	0	0.0	1	0.6	2	1.3	3	1.8	1	0.5

Table 19. Tuberculosis Cases by Selected Risk Factors: Northwest Region, 2001-2005

Total Cases	2001		2002		2003		2004		2005	
	12		15		29		24		19	
	No.	%	No.	%	No.	%	No.	%	No.	%
Occupation										
Health Care	0	0.0	0	0.0	1	3.4	3	12.5	1	5.3
Migrant	2	16.7	0	0.0	1	3.4	0	0.0	0	0.0
Corrections	1	8.3	0	0.0	0	0.0	0	0.0	0	0.0
Type of Residence										
Long Term Care	0	0.0	1	6.7	2	6.9	2	8.3	0	0.0
Prison/Jail	0	0.0	0	0.0	1	3.4	1	4.2	1	5.3
Homeless	1	8.3	1	6.7	0	0.0	0	0.0	1	5.3
Co-Morbidity										
HIV	0	0.0	2	13.3	1	3.4	0	0.0	0	0.0
Substance Use										
Alcohol	4	5.0	1	6.7	4	13.8	7	29.2	1	5.3
IDU	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Non-IDU	0	0.0	0	0.0	0	0.0	2	8.3	1	5.3

Table 20. Tuberculosis Cases by Selected Risk Factors: Southwest Region 2001-2005

Total Cases	2001		2002		2003		2004		2005	
	20		25		22		22		19	
	No.	%	No.	%	No.	%	No.	%	No.	%
Occupation										
Health Care	0	0.0	1	4.0	1	4.5	0	0.0	0	0.0
Migrant	2	10.0	0	0.0	0	0.0	0	0.0	0	0.0
Corrections	1	5.0	0	0.0	0	0.0	0	0.0	0	0.0
Type of Residence										
Long Term Care	0	0.0	0	0.0	0	0.0	3	13.6	2	10.5
Prison/Jail	1	5.0	0	0.0	0	0.0	2	9.1	1	5.3
Homeless	2	0	0	0.0	0	0.0	0	0.0	0	0.0
Co-Morbidity										
HIV	0	0.0	0	0.0	1	4.5	1	4.5	0	0.0
Substance Use										
Alcohol	1	5.0	5	20.0	5	22.7	6	27.3	6	31.6
IDU	0	0.0	0	0.0	0	0.0	0	0.0	1	5.3
Non-IDU	1	5.0	0	0.0	0	0.0	2	9.1	1	5.3

Table 21. Culture Positive Tuberculosis Cases with Drug Resistance: Virginia, 2001-2005

Initial Susceptibilities	2001		2002		2003		2004*		2005	
	250		265		246		254		260	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total Drug Resistance	37	14.8	32	12.1	34	13.8	13	5.1	29	11.2
Any first line drug	27	9.6	28	10.6	32	13.0	12	4.7	26	10.0
Multidrug**	10	4.0	4	1.5	2	0.8	1	0.4	3	1.2

*Due to changes in definitions, streptomycin is no longer considered a first line drug. The drop in the number of resistance cases is an artifact of the new definition.

**Multidrug resistance or MDR is by definition resistance to isoniazid and rifampin.

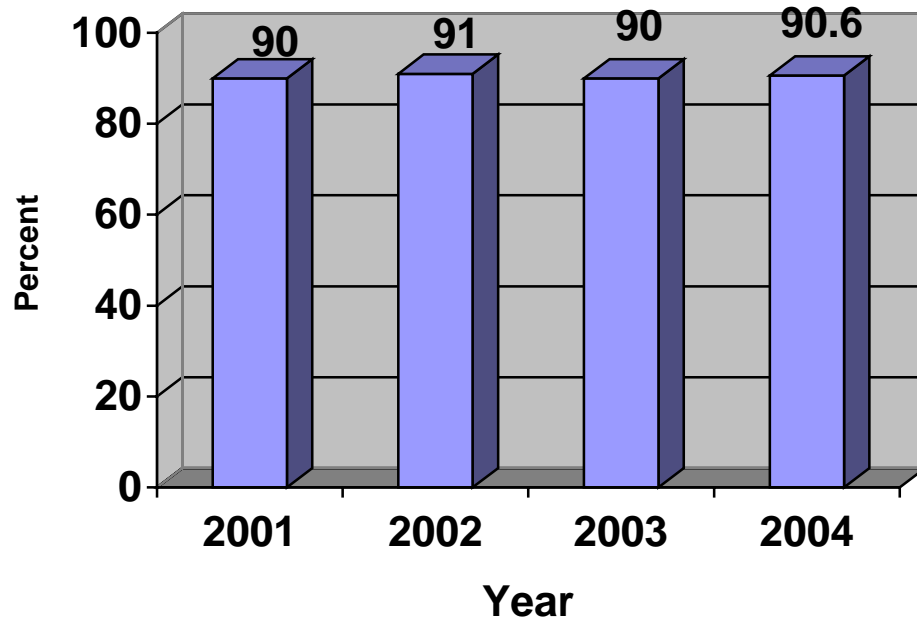
Table 22. Tuberculosis Mortality: Virginia, 2001-2005*

Total Cases	2001		2002		2003		2004		2005	
	306		315		332		329		355	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total Deaths	26	8.5	19	6	26	6.3	26	7.9	31	8.7
Dead at Time Diagnosis	7	2.3	4	1.3	4	1.3	7	2.1	6	1.7
Died During Treatment	19	6.2	15	4.8	22	5.1	19	5.8	25	7.0

*If a person is diagnosed with TB post-mortem or diagnosed with TB at the time of death they are coded as dead at the time of diagnosis. If they died during TB treatment, they are coded as died during treatment. There may be people in either of these categories whose underlying cause of death is not TB.

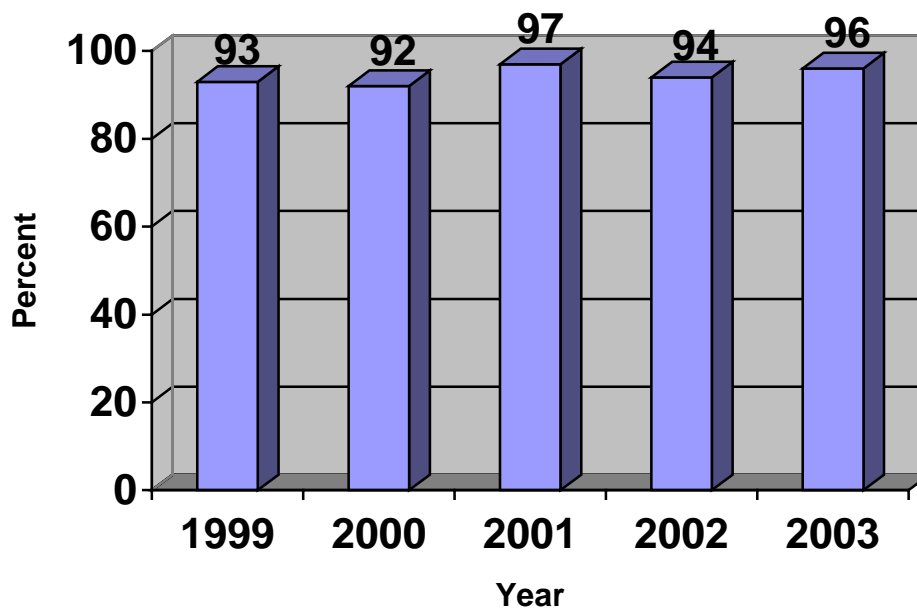
National Program Objectives

Figure 1. Completion of Therapy for Drug-Susceptible Tuberculosis Cases: Virginia, 2001-2004



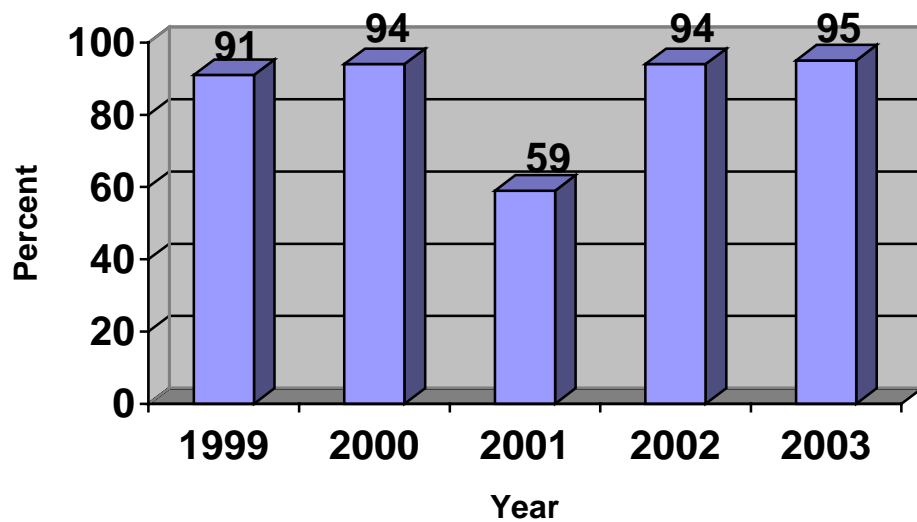
The national program objective for completion of therapy is 90%.

**Figure 2. Percent Sputum Smear Positive Cases with
Contacts Identified: Virginia, 1999-2003**



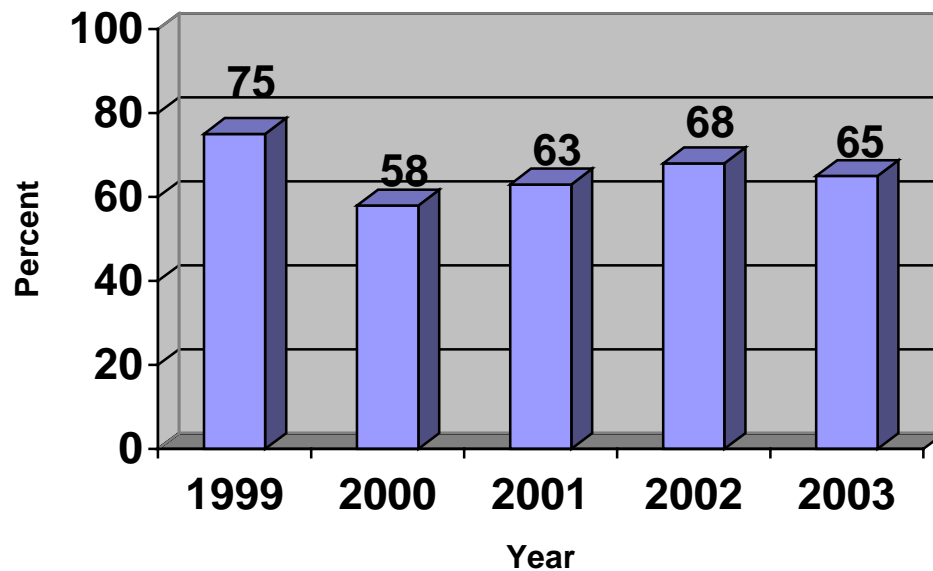
The national program objective for identification of contacts is 90%.

Figure 3. Percent Sputum Smear Positive Cases with Contacts Evaluated: Virginia, 1999-2003



The national program objective for evaluation of contacts is 95%.

**Figure 4. Percent Contacts by Completion of LTBI
Treatment: Virginia, 1999-2003**



The national program objective for completion of treatment for LTBI is 85%.

Technical Notes

TB disease is a reportable condition as defined in the *Regulations for Disease Reporting and Control*. In addition, TB infection in children under age 4 is also a reportable condition. The Division of Disease Prevention, TB Control conducts surveillance for TB disease in the entire population and for TB infection among children. It collects, analyzes, and disseminates data as an integral part of TB control.

Rates per 100,000

In Table 1 rates for Virginia from 1994 to 1999 were calculated using population estimates provided by the Virginia Employment Commission. In Tables 1 and 2, rates for 2000-2005 were calculated using 2000 Census data released by the United States Bureau of the Census, Population Estimates Program.
http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=PEP&_submenuId=datasets_3&lang=en&ts=

Definitions

Pediatric: In this report “pediatric” refers to persons up to and including the age of 14 years old.

Tuberculosis Case Definition¹

Cases confirmed as official morbidity in Virginia and included in this report meet the following case definition:

Clinical description

A chronic bacterial infection caused by *Mycobacterium tuberculosis*, characterized pathologically by the formation of granulomas. The most common site of infection is the lung, but other organs may be involved.

Clinical Case Definition

A case that meets the following criteria:

- A positive tuberculin skin test
- Other signs and symptoms compatible with tuberculosis (e.g., an abnormal, unstable [i.e., worsening or improving] chest radiograph, or clinical evidence of current disease)
- Treatment with two or more antituberculosis medications
- A completed diagnostic evaluation [*to rule out other conditions*]
- [*Virginia also requires documented clinical improvement on treatment*]

¹ CDC. Case Definitions for infectious conditions under public health surveillance. MMWR 1997;46(No. RR-10):40-41.

Laboratory criteria for diagnosis

- Isolation of *M. tuberculosis* from a clinical specimen* or
- Demonstration of *M. tuberculosis* from a clinical specimen by nucleic acid amplification test**, or
- Demonstration of acid-fast bacilli in a clinical specimen when a culture has not been or cannot be obtained.

Case classification

Confirmed: a case that meets the clinical case definition or is laboratory confirmed.

*Use of rapid identification techniques for *M. tuberculosis* (e.g., DNA probes and mycolic acids high-pressure liquid chromatography performed on a culture from a clinical specimen) are acceptable under this criterion.

**Nucleic acid amplification (NAA) tests must be accompanied by culture for mycobacteria species. However, for surveillance purposes, CDC will accept results obtained from NAA tests approved by the Food and Drug Administration (FDA) and used according to the approved product labeling on the package insert.